

**ASSOCIATION OF CALIFORNIA WATER
AGENCIES (ACWA)
COMMENTS ON THE**

DRAFT
**ENERGY RESOURCE INVESTMENT PLAN
OF THE
CALIFORNIA CONSUMER POWER AND
CONSERVATION FINANCING AUTHORITY**

ACWA's mission is
to assist its members
in promoting the
development,
management and
reasonable beneficial
use of good quality
water at the lowest
practical cost in an
environmentally
balanced manner.

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I. INTRODUCTION

The Association of California Water Agencies represents approximately 450 public water agencies within the state of California. A list of our members is attached.

Our members are responsible for delivery of over 90% of the water distributed in the state of California. We are significant energy users. Water pumping uses approximately 5% of the peak electrical demand of the state and 7% of the total electricity use in the state on an annual basis.

We support the objectives of the draft energy resource investment plan, specifically the use of a public agency to develop adequate reserve margins, the development of generation diversity and an emphasis upon demand side management. However, we have a number of concerns about the current proposed resource plan. We are concerned about the definition of what is a renewable technology. We are concerned about the lack of analysis on the integration of proposed technologies with existing supply. We are concerned about the lack of customer choice and the emphasis on the state as the only purchasing vehicle for the development of new renewable resources.

II. CONCERNS WITH THE CALIFORNIA POWER AUTHORITY (CPA) DRAFT RESOURCE PLAN

II.1 DEFINITION OF RENEWABLES

The word “renewables” is tossed about casually throughout the proposal, but there is never a definition. When we look at the proposal it appears that renewables includes wind, solar, geothermal, biogas, and landfill gas, but not hydro. If hydro, the ultimate renewable resource, is to be excluded from this resource plan consideration, then the term “renewables” should be replaced with the more appropriate term “politically correct renewables”.

II.2 LACK OF ANALYSIS

We are very concerned that the current proposal to increase reserves when there is no analysis on the impact of, or integration of, the proposed new generation resources with existing generation resources. Given that the state has purchased too much electricity under inflexible contracts and is dumping significant amounts of electricity during certain periods of the day due to insufficient demand, adding increasing amounts of inflexible generation resources such as wind or solar will only exacerbate the current problem. This will mean that the customers of California will pay twice for electricity that they don't use, (once for the state contracts for electricity whose excess is dumped on the market and second for the renewable electricity that is in excess and will also have to be dumped on the market because there is insufficient demand).

Running out of the state and purchasing power supplies without adequate analysis is what got us into trouble in the first place and left California with a large economic headache and a supply of relatively inflexible contracts. The CPA should not repeat that mistake by purchasing additional generation resources without consideration of their impacts on existing generation.

The analysis is relatively simple to do. The CPA simply needs to take the existing utility resources, add to them the existing state contracts, and then determine the characteristics of the additional resources that are needed to meet demand and provide adequate flexible operating reserves. What the CPA will find, at least until a portion of the state contracts start expiring, is that the addition of thousands of megawatts of inflexible generation, such as wind and solar, cannot be absorbed during periods of the day due to the contracts the state has entered into and needs to be deferred, delayed, or replaced with more dispatchable generation sources.

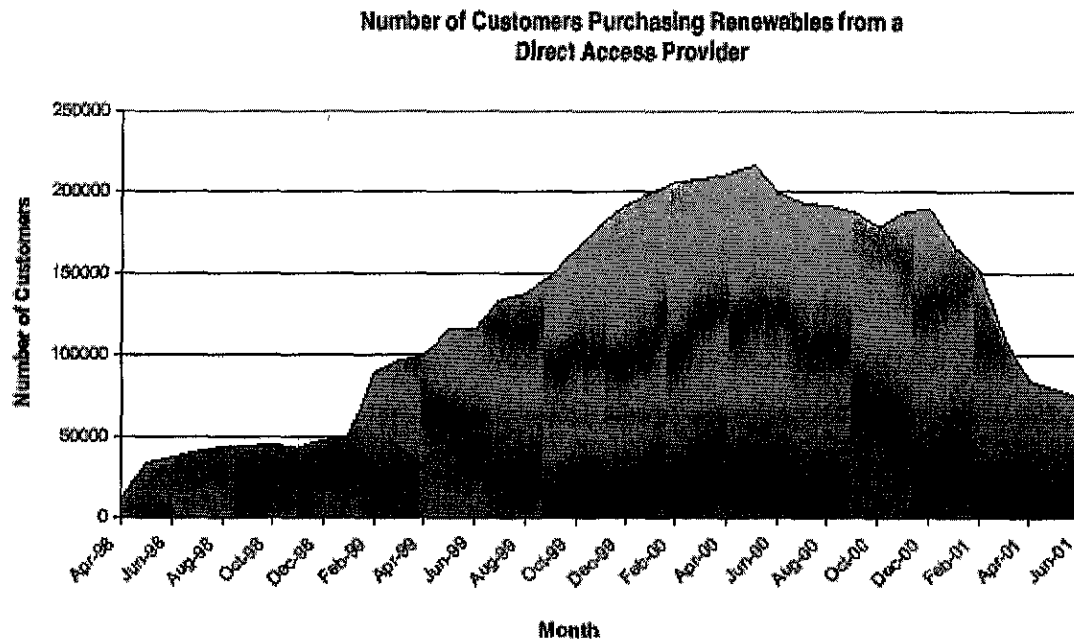
II.3 LACK OF CUSTOMER CHOICE

The draft resource plan laments that customer choice for green power has been eliminated in California:

"Customers cannot choose green energy. Californians no longer can choose clean resources to meet their electricity needs from the central grid;" (Draft Resource Plan. Page 3)

But then the draft inexplicably doesn't try to rectify the problem but assumes that the state should step in and purchase the renewable generation.

The problem is graphically depicted in this figure produced by the California Energy Commission¹¹:



The solution is not to have the state do the purchasing of renewable electricity, but to return to customer choice for renewable electricity. We provide the following two examples of why this is critical for the development of additional renewable generation in California.

II.3.1 SMALL HYDRO DEVELOPMENT

There has been significant interest in the development of small hydroelectric projects by water agencies in California over this last year. Typically we will pump water out of the canal, or from underground, and up over hills to get to the water use

¹¹ "2002-2012 Electricity Outlook", California Energy Commission, P700-01-004, November 2001, Figure III-5-3.

locations. As the water comes down the opposite side of the hill we can install pressure reducing valves or hydroelectric generators.

These hydro generators are characterized by their small size (under 1 MW), being geographically distant from the electrical use (at the pumping or treatment sites) and being one of the best environmental electricity producing technologies available. They produce electricity by utilizing the falling energy of water that would be wasted otherwise, they are generally on enclosed water systems so they have no impact on fish or other wildlife, they reduce greenhouse gasses, and they improve the overall efficiency of the water system operation. We are not talking about a large number of MWs here; the identified potential is less than 50 MW.

Customer choice allows us to sell the electricity generated by these small hydro facilities to ourselves. However, because their generation is on the opposite side of the hill from our use of electricity (at the pumps or treatment plants), absent direct access and the ability to use the utility distribution lines, they will not be installed because there is nothing we can do with the electricity. These projects are too small to participate in the wholesale market. Killing direct access has killed development of one of the most environmentally benign sources of electricity available in California.

II.3.2 ANAEROBIC DIGESTION DEVELOPMENT

AB29X allocated \$205 million for Energy Efficiency and Renewable Energy Programs-Emerging Renewable Buy down Program, of which \$15 million was specifically earmarked for anaerobic digestion programs. There are 1.5 million dairy cows in California. Each produces about 6 pounds of manure daily. This contributes to significant land, air, and water quality issues.

Anaerobic digestion technologies turn cow manure into electricity. Anaerobic bacteria is injected into solid cow manure, which breaks it down into methane gas, then the digester burns the gas to generate electricity.

How has the termination of direct access killed this technology? Because the digester process produces more electricity than the dairy can use, and absent a market for the excess electricity, these projects are not economically viable. A dairy of 1500

milking cows could potentially produce 1 MW of power on a 24/7 basis and potentially 2 MW of on-peak power. This is approximately 3 to 5 times the total electrical load of the dairy operation itself. These projects are geographically dispersed and significantly less than the 10 MW ISO generation minimum size, so selling into the wholesale market is not an option.

Because the anaerobic digestion technology has the ability to store methane for a period of time, this technology is one of the few dispatchable green power producers. The dispatchability of this technology can be used to improve the load following ability and reliability of other renewable power such as wind and solar.

We (ACWA) have negotiated through our ESP (Electricity Service Provider) with a producer to purchase the excess electricity from these digesters as they are being constructed in the future. The total amount of capacity that we are discussing is in the 250-300 MW range. The uncertainty on the ability to sell the excess electricity generated to us has put further development of these generators on hold.

It should be a matter of state policy that encourages private investments, rather than having the state spending money, particularly during times of budget problems. The CPA should encourage direct access for renewable generation as a first step. For investments that are not being made by private capital then the state can step in, but should avoid expenditures when the private sector is willing to do so.

II.4 DEMAND-SIDE MANAGEMENT

Water agency operation has the potential to be one of the most flexible users of electricity in the state. We can change the way we use our water in storage, shift our pumping, add facilities to increase our ability to shift electrical demand. Indeed, water agencies have been the major contributors to the summer curtailment programs during the last two summers. There is the potential for hundreds of MW of shifted electrical demand within the water agencies in the state.

We have to operate within certain parameters. We have to supply sufficient water and we have to maintain sufficient pressure within our systems. And we need to do this at the least cost.

We have several observations based upon our experience in the last two summers. We have used these results in working with the Automated Power Exchange (APX) in the development of their proposal to CPA. We would like to go on record as supporting the APX proposal.

We need flexibility. Typically we can shut off pumping for several hours but long durations without pumping compromises our ability to deliver water. The ability to aggregate several water agencies significantly increases the curtailment ability. For example, if we can aggregate three water agencies that can each curtail 10 MW for two hours and schedule those as a single block, then we can provide 10 MW of load shifting for six hours. Without the ability to aggregate we can provide no curtailment for those six hours.

We need long-term (multiple year) commitments. Water in storage at an elevation is basically stored electricity. However, the capital investment necessary to increase our storage ability, or change the configuration of our systems, is more than can be recovered during a single summer. All of the curtailment that we have provided during the past two summers has been simply operational changes. There are hundreds of additional MWs of curtailment available if we have the financial certainty that we can recover those investments over several years.

We need consistency between curtailment programs and rate design. Typical large user rate design has an on-peak period of six hours. Our members try and avoid using electricity during the on-peak period to avoid the onerous demand charges. This often means that we have to start pumping at 6 pm in order to refill our storage and meet water demands. A curtailment period extending until 8 pm at night is not possible for us to participate in.

III. CONCLUSION AND RECOMMENDATIONS

We support the objectives of the CPA draft energy resource investment plan, specifically the use of a public agency to develop adequate reserve margins, the development of generation diversity, and an emphasis upon demand-side management. We have the following recommendations:

- Renewable generation should include hydroelectric facilities.
- The CPA should do an analysis on the integration of proposed technologies with existing supply and add only those technologies in those amounts that compliment existing resources and contracts.
- Customer choice (the ability of consumers to purchase renewable generation) should be reinstated. The emphasis on the state as the only purchasing vehicle for the development of new renewable resources should be a secondary approach.
- Demand-side management programs should include flexibility (specifically the ability to aggregate accounts), multi-year commitments, and a consistency between curtailment programs and rate design.

Thank you for your consideration of these issues.

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